MINISTÈRE DE LA DÉFENSE

ARMÉE DE L'AIR

FRENCH INTERIM MALE UAV PROGRAM

4 INDUSTRIAL STATUS

June, 13th 2002

EADS European Aeronautic Defence and Space Company

Lcl Monsterleet FAF Staff
J. Caron EADS S&DE-ISR

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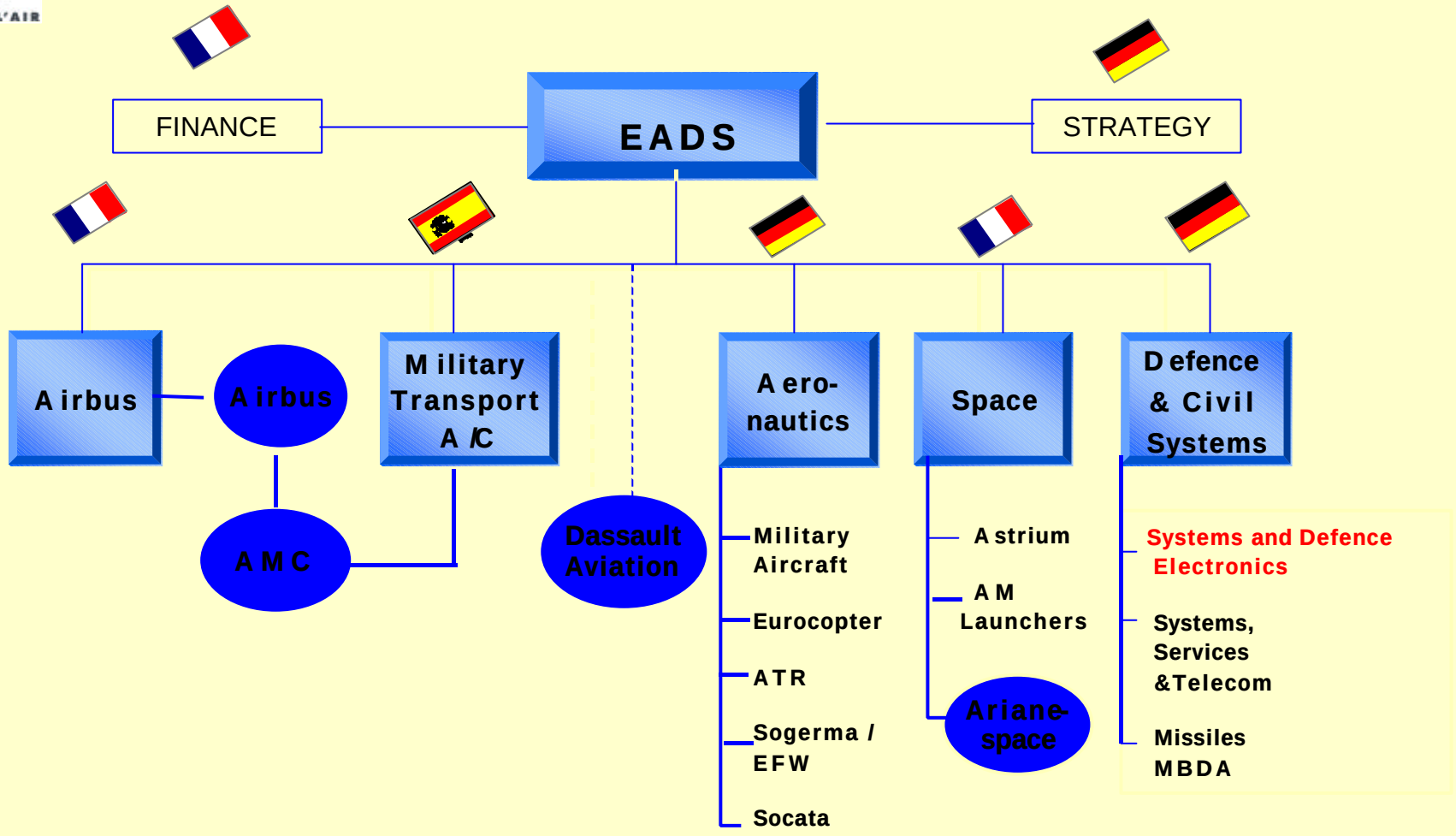
ISR systems activities localisation in the EADS organisation



Systems and Defence Electronics includes the former UAV activities from Aerospatiale, Matra, DASA and CAC Systems

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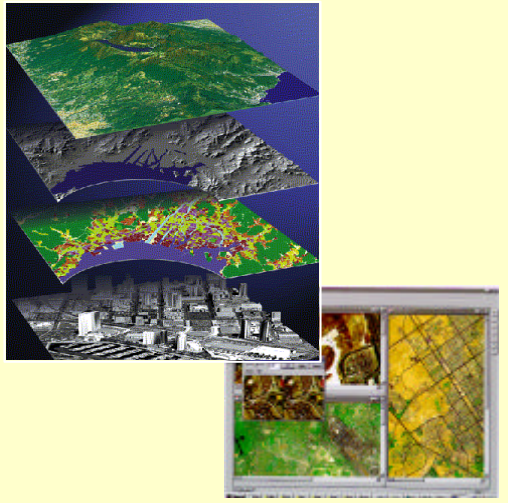
EADS S&DE-ISR delivers turnkey solutions
for intelligence surveillance and reconnaissance purposes.

ISR
Intelligence, Surveillance & Reconnaissance

SYSTEMS

GROUND SEGMENTS

GEOMATICS



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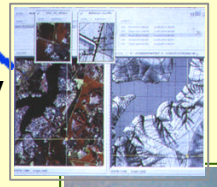
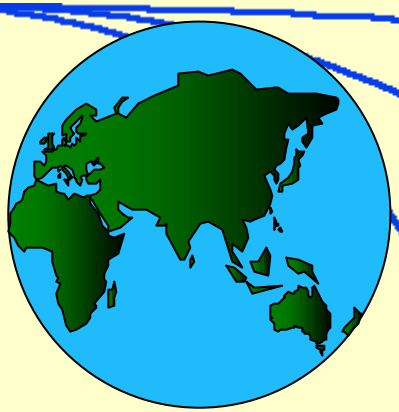
Command and control

Situation assessment. Simulation



Geography

Interpretation



Archiving & Production

EO, SAR, EW...

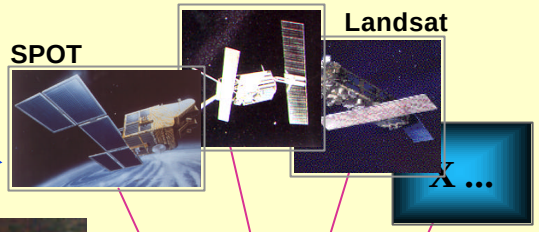
UAV

RECCE AC

Radarsat

Landsat

SPOT



X ...

EO, SAR...

Acquisition

stations

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OPERATIONAL MISSIONS COVERED

- GROUND SURVEILLANCE
- AEW (Airborne Early Warning)
- AIRBORNE COMMAND & CONTROL
- ELECTRONIC WARFARE
- RELAY
- SPECIAL OPERATIONS
- FLYING TEST BEDS
- ACTD (feasibility demonstrations)

THE BEST SYSTEM

AT THE RIGHT TIME

DEDICATED TO THE CUSTOMER & HIS BUDGET

MANNED AND/OR UNMANNED AIRBORNE SYSTEMS + ASSOCIATED GROUND SUB-SYSTEMS (HW,SW)

SENSORS (FROM EADS OR PARTNERS)

FIXED OR MOBILE SATELLITE RECEPTION STATIONS

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System capabilities

AUTONOMY : + 24 h, or 18 hours at 1000 km @ 15000 feet with mission payload to achieve :

IMINT Missions

- All Weather Surveillance
- All Weather Reconnaissance
- Battle Management
- Battle Damage Assessment

Support Missions

- Radio Relay
- Target designation / illumination

MISSION RELIABILITY : Over 100 000 hours between two uncontrolled losses.

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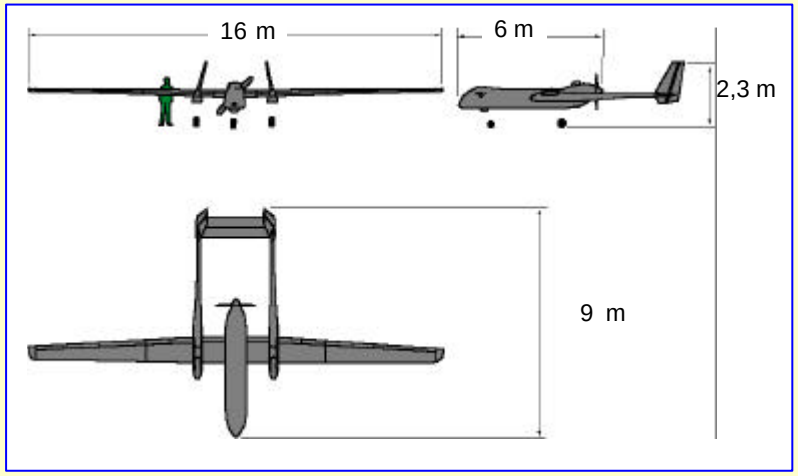
Air Vehicle characteristics



Max Take-off weight	1150 kg
Max. Payload capacity	250 kg
Max. Fuel capacity	300 kg
Max altitude	32 000 ft
Operational altitude	> 20 000 ft
Time of climb	50 mn (20 kft)
Max speed	125 ktas
Cruise speed at OA	90 ktas
Total mission time	30 h
Loiter capability at 550 NM	18 h
Maximum range (1 h loiter)	1700 nm

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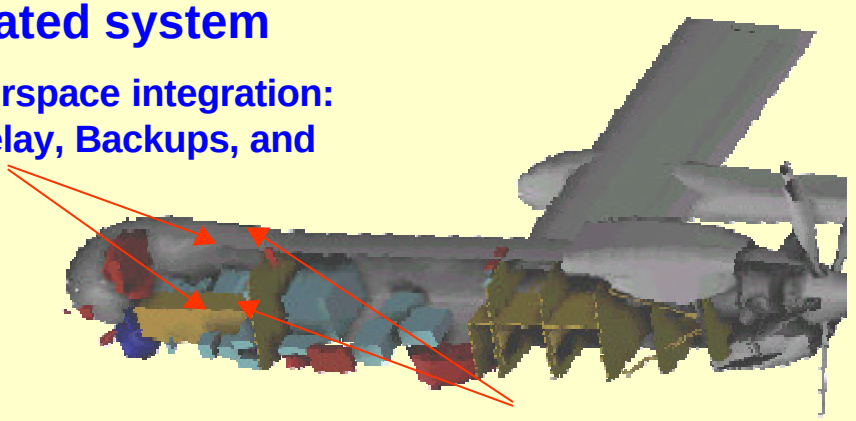
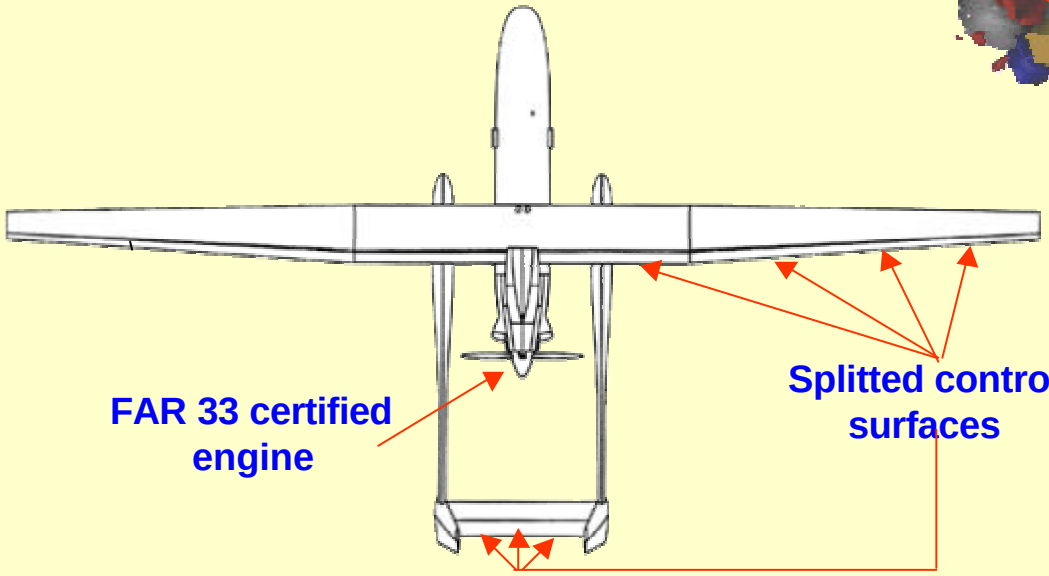
Safety integrated system

Safety equipments for airspace integration: IFFmode S, ATC radio relay, Backups, and piloting camera.





Fail safe avionics approach :

Redundancies, fail safe architecture and rerouting capability in case of major failure (Flight termination system).

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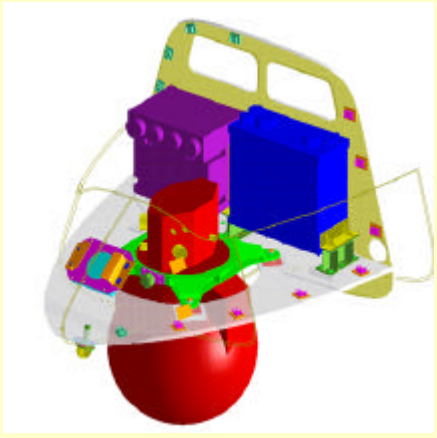
EO/IR/LR COTS Payload



Turret already in production :

- **EO (20-280 and 55-770 mm)**
- **IR (32, 150 and 600 mm)**
- **Laser (stabilisation => + 8km)**

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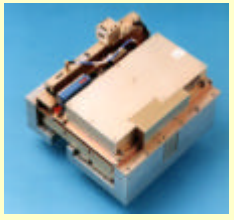
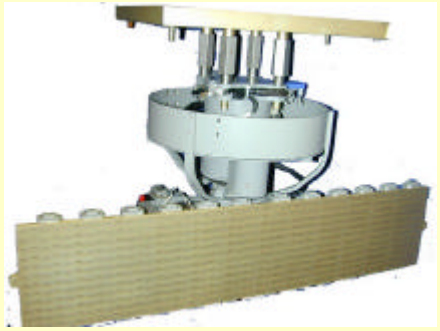
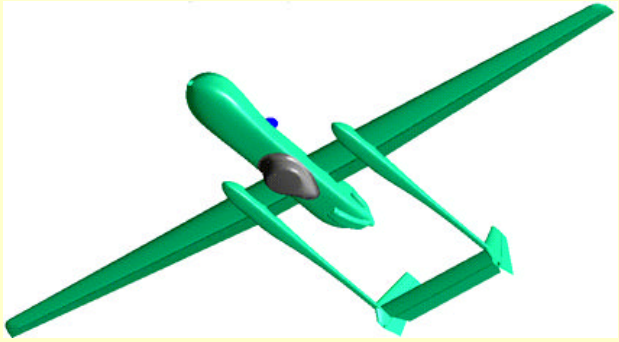
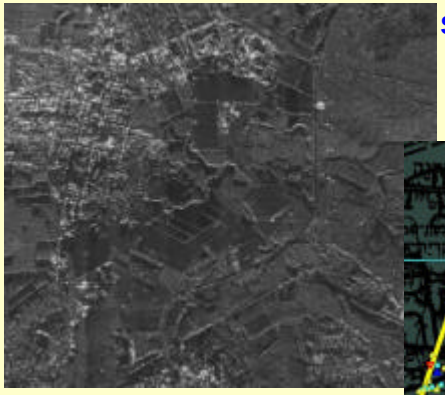
SAR COTS Payload

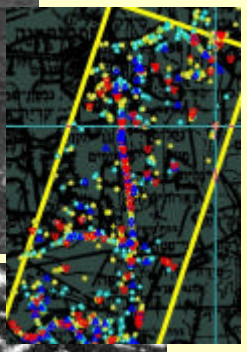








Strip mode



GMTI mode

Spot mode

Range: > 30 Km in adverse conditions
Resolution: up to 30cm
Modes: strip, spot, MTI

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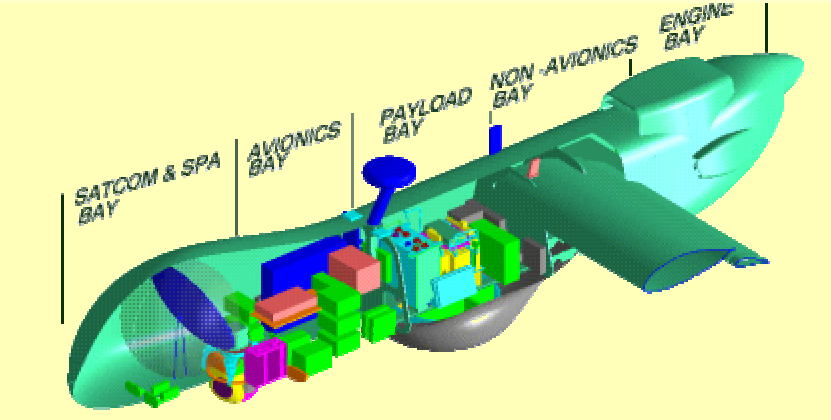
COTS Avionics + innovative developments

MPCA*
(Modular Central Processing Assembly)



Data Manager*

Radio relay*

Recorder*

INS/GPS*

IFF*

** pictures only for illustration, without contractual aspectc*

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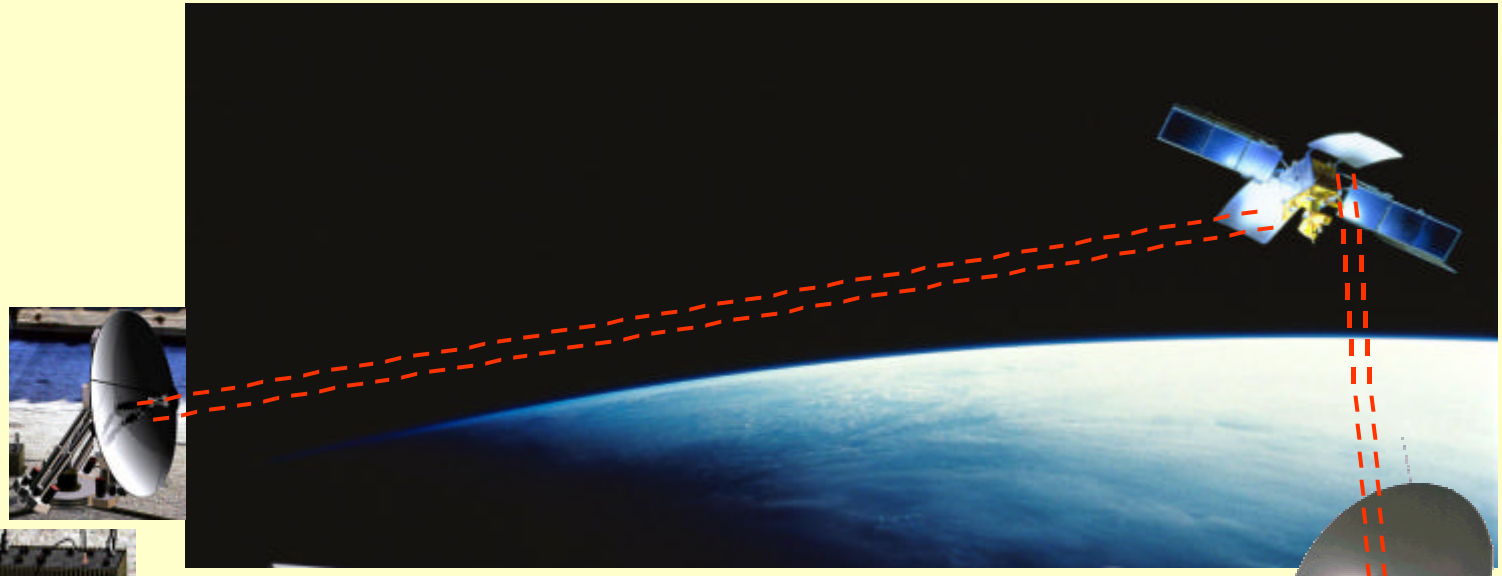
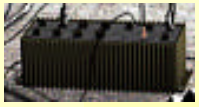
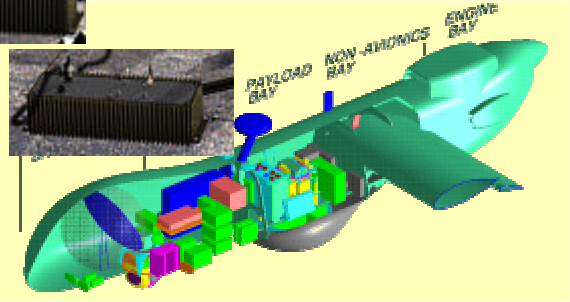
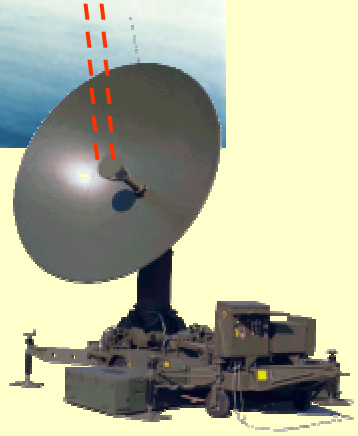






4.Hexapod kinematics.mpg



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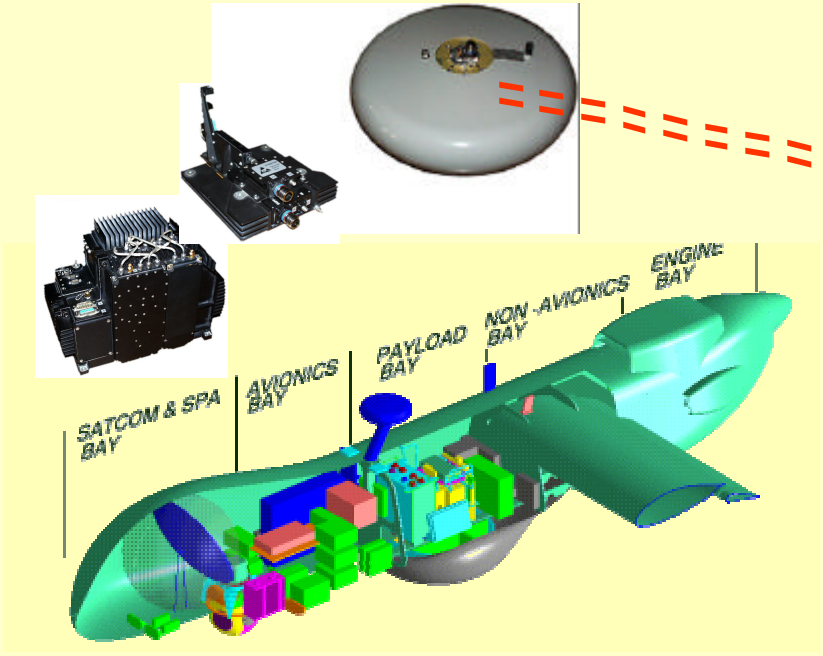
COTS LOS Data-Link

Full duplex data link with high protection against jamming



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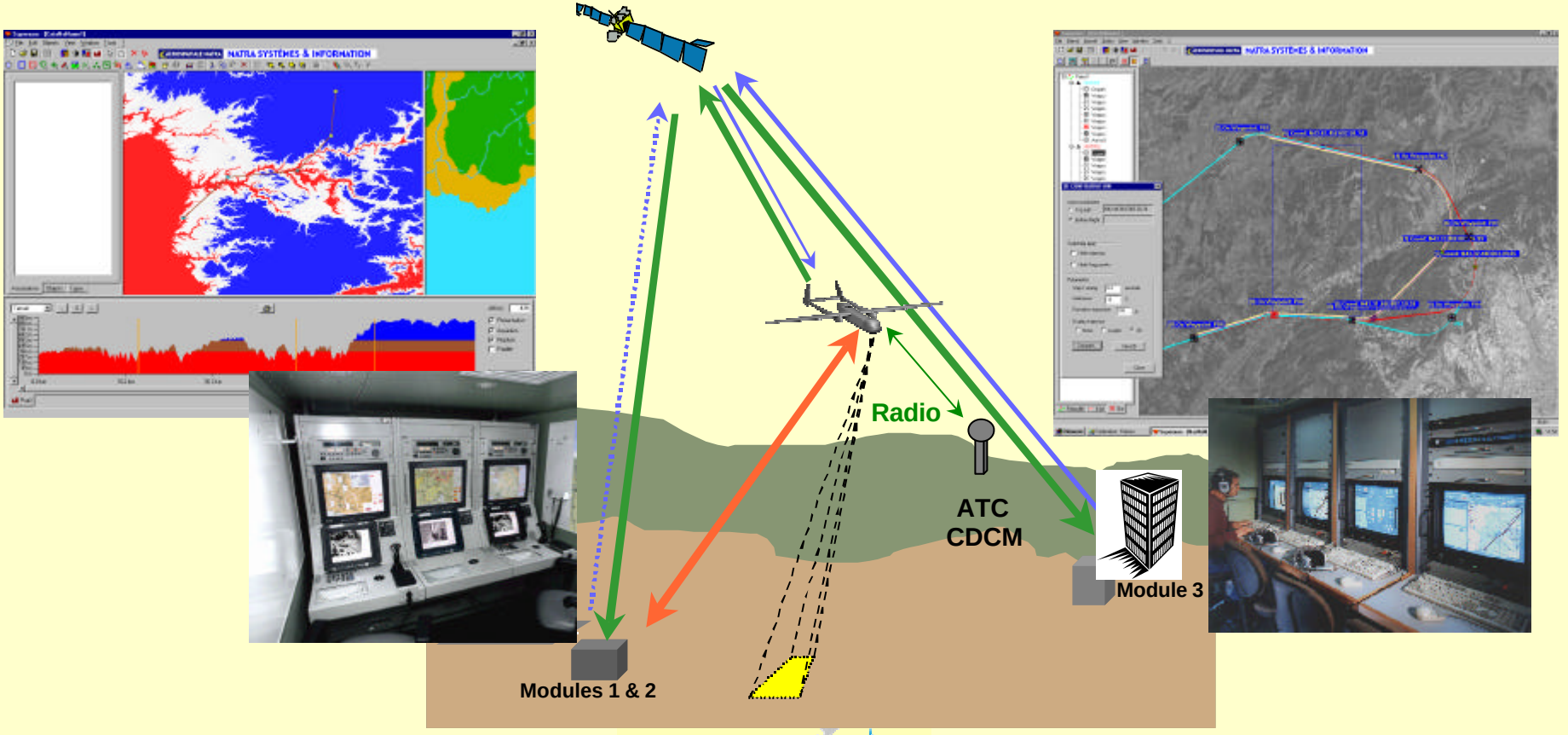
SYSTEM ARCHITECTURE



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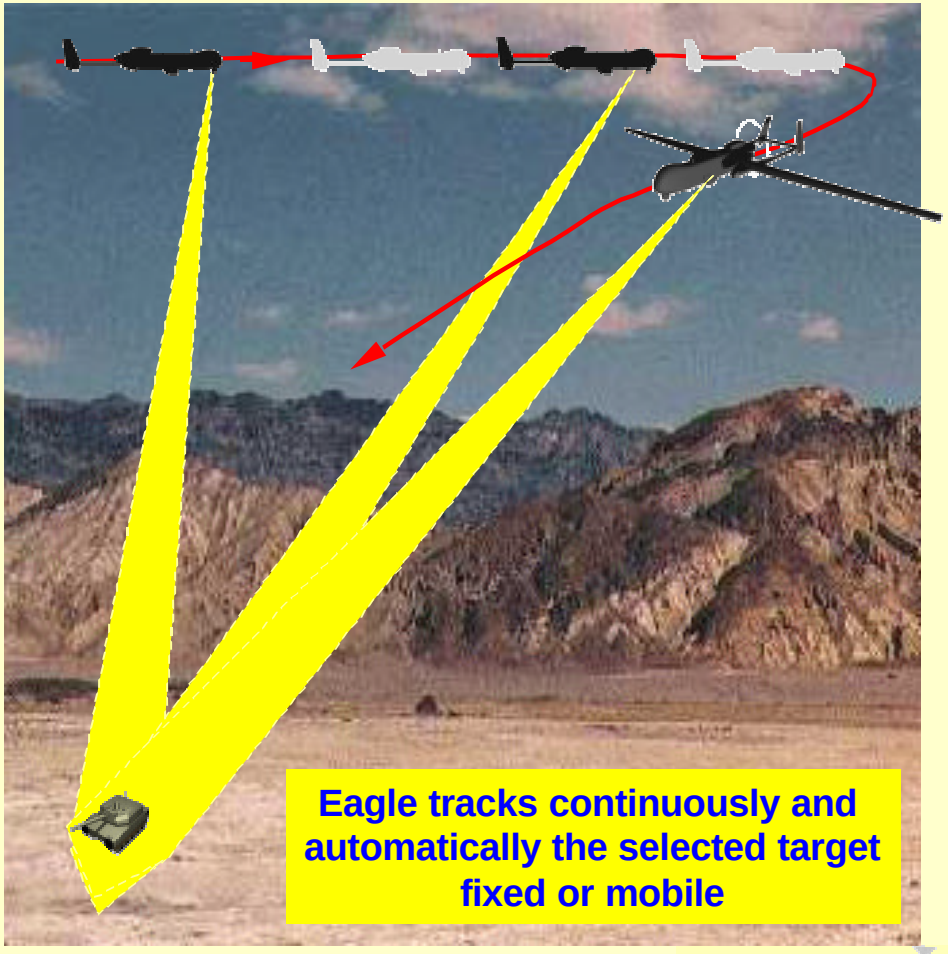

Example of smart system function : the "camera guided" mode

- The trajectory of the aerial vehicle is slaved to the EO/IR camera in order to track continuously the selected target
- This mode allows the operator to focus on the monitor by controlling only the EO/IR payload.
- When the selected target is fixed, the aerial vehicle will hold around the target or at a predefined offset from this target.
- When the selected target is on the move, the aerial vehicle will automatically track the moving target either above or at a predefined offset from this target.

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